WHAT IS CLAIMED IS:

1. A wheel-support rolling bearing unit comprising:

an outer ring having first and second outer raceways formed on its inner peripheral surface;

a hub having a flange formed on the outer peripheral surface of one end thereof, said hub having a first inner raceway which is disposed on its middle portion in an axial direction thereof and is confronted with said first outer raceway of said outer ring, said hub having a stepped part and a cylindrical portion disposed at the other end of said hub, a step surface being defined on said hub by said stepped part;

an inner ring fit to said stepped part of said hub with interference while the end surface of said inner ring is brought in contact with said step surface of said hub, said inner ring having a second inner raceway which is formed on its outer peripheral surface and is confronted with said second outer raceway of said outer ring;

a plurality of first rolling elements located between said first inner raceway and said first outer raceway; and

a plurality of second rolling elements located between said second inner raceway and said second outer raceway;

wherein a caulking portion, which is formed by plastically deforming said cylindrical portion, is protruded beyond at least said inner ring thus fit to said hub,

wherein the inside diameter of said stepped part is

smaller than that of a portion of said hub where said first inner raceway is formed, and

wherein a pre-load is applied to said first and second rolling elements by bringing said end surface of said inner ring in contact with said step surface of said stepped part prior to the caulking, and

wherein a static friction force which acts on said inner ring by the interference fitting is larger than an axial load acting on said inner ring by the pre-load applied to said rolling elements.

2. The wheel-support rolling bearing unit according to claim 1, wherein said hub comprises:

a main body integrally formed with said flange portion; and

a separate inner ring which has said first inner raceway and is fit to said main body, said step surface being formed on an end surface of said separate inner ring.

3. The wheel-support rolling bearing unit according to claim 1, wherein a stress, which is caused in the circumferential direction in said inner ring by the interference fitting, is smaller than the result of subtracting a stress, which acts on said inner ring in the circumferential direction when said caulking portion is formed, from a

tolerable stress acting on said inner ring in the circumferential direction.

4. The wheel-support rolling bearing unit according to claim 2, wherein a stress, which is caused in the circumferential direction in said inner ring by the interference fitting, is smaller than the result of subtracting a stress, which acts on said inner ring in the circumferential direction when said caulking portion is formed, from a tolerable stress acting on said inner ring in the circumferential direction.

5. A wheel-support rolling bearing unit comprising:

an outer ring having first and second outer raceways formed on its inner peripheral surface;

a hub having a flange formed on the outer peripheral surface of one end thereof, said hub having a first inner raceway which is disposed on its middle portion in an axial direction thereof and is confronted with said first outer raceway of said outer ring, said hub having an end portion disposed at the other end of said hub;

an inner ring fit to said end portion with interference, said inner ring having a second inner raceway which is formed on its outer peripheral surface and is confronted with said second outer raceway of said outer ring;

a plurality of first rolling elements located between said first inner raceway and said first outer raceway; and

a plurality of second rolling elements located between said second inner raceway and said second outer raceway;

wherein a caulking portion, which is formed by plastically deforming a portion of said end portion of said hub, is protruded beyond at least said inner ring thus fit to said hub, and

wherein a stress, which is caused in the circumferential direction in said inner ring by the interference fitting, is smaller than the result of subtracting a stress, which acts on said inner ring in the circumferential direction when said caulking portion is formed, from a tolerable stress acting on said inner ring in the circumferential direction.

6. The wheel-support rolling bearing unit according to claim 5 wherein said hub comprises:

a main body integrally formed with said flange portion; and

a separate inner ring which has said first inner raceway and is fit to said main body.

7. A method for manufacturing a wheel-support rolling bearing unit comprising:

an outer ring having first and second outer raceways

formed on its inner peripheral surface;

a hub having a flange formed on the outer peripheral surface of one end thereof, said hub having a first inner raceway which is disposed on its middle portion in an axial direction thereof and is confronted with said first outer raceway of said outer ring, said hub having a stepped part and a cylindrical portion disposed at the other end of said hub, a step surface being defined on said hub by said stepped part;

an inner ring provided at the other end of said hub, said inner ring having a second inner raceway which is formed on its outer peripheral surface and is confronted with said second outer raceway of said outer ring;

a plurality of first rolling elements located between said first inner raceway and said first outer raceway; and

a plurality of second rolling elements located between said second inner raceway and said second outer raceway;

said method comprising:

fitting said inner ring to said stepped part of said hub by interference fitting while bringing an end surface of said inner ring into contact with the step surface of said hub , to thereby applying a pre-load to said rolling elements;

forming a caulking portion by plastically deforming said cylindrical portion, wherein said caulking portion is protruded beyond at least said inner ring thus fit to said hub.

8. The method according to claim 7, wherein a static friction force which acts on said inner ring by the interference fitting is larger than an axial load acting on said inner ring by the pre-load applied to said rolling elements.

9. The method according to claim 7, wherein a stress, which is caused in the circumferential direction in said inner ring by the interference fitting, is smaller than the result of subtracting a stress, which acts on said inner ring in the circumferential direction when said caulking portion is formed, from a tolerable stress acting on said inner ring in the circumferential direction.